

What is claimed is:

1. An isolated nucleic acid molecule selected from the group consisting of:
 - a) a nucleic acid molecule comprising a nucleotide sequence which
5 is at least 60% homologous to the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, or a complement thereof;
 - b) a nucleic acid molecule comprising a fragment of at least 949 nucleotides of a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, or a complement thereof;
 - 10 c) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence at least about 50% homologous to the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5;
 - d) a nucleic acid molecule which encodes a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID
15 NO:5, wherein the fragment comprises at least 15 contiguous amino acid residues of the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5; and
 - e) a nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5, wherein the nucleic acid molecule hybridizes to a
20 complement of a nucleic acid molecule comprising SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, or SEQ ID NO:6, under stringent conditions.
2. The isolated nucleic acid molecule of claim 1 which is selected from the group consisting of:
 - 25 a) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, or a complement thereof; and
 - b) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5.
- 30 3. The nucleic acid molecule of claim 1 further comprising vector nucleic acid sequences.

4. The nucleic acid molecule of claim 1 further comprising nucleic acid sequences encoding a heterologous polypeptide.
5. A host cell which contains the nucleic acid molecule of claim 1.
6. The host cell of claim 5 which is a mammalian host cell.
7. A non-human mammalian host cell containing the nucleic acid molecule of claim 1.
8. An isolated polypeptide selected from the group consisting of:
- a) a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5, wherein the fragment comprises at least 15 contiguous amino acids of SEQ ID NO:2 or SEQ ID NO:5;
 - b) a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a complement of a nucleic acid molecule comprising SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, under stringent conditions; and
 - c) a polypeptide which is encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 50% homologous to a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, or SEQ ID NO:6.
 - d) a polypeptide comprising an amino acid sequence which is at least 30% homologous to the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5.
9. The isolated polypeptide of claim 8 comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5.
10. The polypeptide of claim 8 further comprising heterologous amino acid sequences.

11. An antibody which selectively binds to a polypeptide of claim 8.
12. A method for producing a polypeptide selected from the group consisting
5 of:
- a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO:5;
 - b) a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5; wherein the fragment comprises at least 15
10 contiguous amino acids of SEQ ID NO:2 or SEQ ID NO:5; and
 - c) a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:5, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a complement of a nucleic acid molecule comprising SEQ ID NO:1, SEQ ID
15 NO:3, SEQ ID NO:4, SEQ ID NO:6, under stringent conditions;
comprising culturing the host cell of claim 5 under conditions in which the nucleic acid molecule is expressed.
13. A method for detecting the presence of a polypeptide of claim 8 in a
20 sample comprising:
- a) contacting the sample with a compound which selectively binds to the polypeptide; and
 - b) determining whether the compound binds to the polypeptide in the sample to thereby detect the presence of a polypeptide of claim 8 in the
25 sample.
14. The method of claim 13, wherein the compound which binds to the polypeptide is an antibody.
15. A kit comprising a compound which selectively binds to a polypeptide of claim 8 and instructions for use.
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16. A method for detecting the presence of a nucleic acid molecule in claim 1 in a sample comprising:

- a) contacting the sample with a nucleic acid probe or primer which selectively hybridizes to a complement of the nucleic acid molecule; and
- 5 b) determining whether the nucleic acid probe or primer binds to a nucleic acid molecule in the sample to thereby detect the presence of a nucleic acid molecule of claim 1 in the sample.

17. The method of claim 16, wherein the sample comprises mRNA
10 molecules and is contacted with a nucleic acid probe.

18. A kit comprising a compound which selectively hybridizes to a complement of a nucleic acid molecule of claim 1 and instructions for use.

19. A method for identifying a compound which binds to a polypeptide of claim 8 comprising:

- a) contacting the polypeptide, or a cell expressing the polypeptide with a test compound; and
- 20 b) determining whether the polypeptide binds to the test compound.

20. The method of claim 19, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

- a) detection of binding by direct detection of test compound/polypeptide binding;
- 25 b) detection of binding using a competition binding assay; and
- c) detection of binding using an assay for SMRTe activity.

21. A method for modulating the activity of a polypeptide of claim 8 comprising contacting the polypeptide or a cell expressing the polypeptide with a
30 compound which binds to the polypeptide in a sufficient concentration to modulate the activity of the polypeptide.

22. A method for identifying a compound which modulates the activity of a polypeptide of claim 8 comprising:

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- a) contacting a polypeptide of claim 8 with a test compound; and
 - b) determining the effect of the test compound on the activity of the polypeptide to thereby identify a compound which modulates the activity of the polypeptide.

23. A method for identifying a compound which modulates the activity of a polypeptide of claim 8 comprising:

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- a) contacting a cell containing a polypeptide of claim 8 with a test compound; and
 - b) determining the effect of the test compound on the activity of the polypeptide to interact with a SMRTe target molecule thereby identifying a compound which modulates the activity of the polypeptide.

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24. The method of claim 23, wherein said activity is corepression of gene regulation at the level of transcription.

25. The method of claim 23, wherein said SMRTe target molecule is a
20 nuclear hormone receptor.

26. The method of claim 25, wherein said contacting is in the presence of a ligand that binds a nuclear hormone receptor.

25 27. A method for treating or preventing a condition associated with aberrant SMRTe protein or nucleic acid expression or activity comprising,
administering to a subject a therapeutically effective amount of an agent
sufficient to modulate said aberrant SMRTe protein or nucleic acid expression or
activity in said subject.

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28. The method of claim 27, wherein said condition is a cancer.

29. A method for modulating SMRTe-mediated gene regulation in a subject in need thereof comprising,

administering a therapeutically-effective amount of an agent to the subject such that modulation occurs.

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